

2007Z 12 OCT 59

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DECLASSIFIED  
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*ops*  
*Comm*  
*Mat*  
*E-b*

DIRECTOR  
25X1A

RECEIVED

DPD (1,2,3,4,5,6,7,8,9,10)

DS/C (11)

SAD

FILE.

TOR: 2053Z 12 OCT 59

*Action*  
*Answer sent 13 OCT 59*  
*REST*

OPERATIONAL - IMMEDIATE

IN 09206

25X1A

25X1A

25X1A

4079

*I-75*  
*file*

25X1A FOR [REDACTED] FROM C. L. JOHNSON

25X1A

1. REGARDING AC POWER SUPPLY SYSTEM ON [REDACTED] AIRCRAFT.

FLIGHT TESTS PRESENTLY UNDER WAY ON DIRECT DRIVEN 5 KVA ALTERNATOR MOUNTED ON FRONT OF J-75 ENGINE. RESULTS VERY SATISFACTORY AFTER TWELVE HOURS OF FLIGHT TIME. FREQUENCY RANGE OF THIS SYSTEM WILL VARY WITH TIME AND TYPE OF MISSION. ON [REDACTED] MAXIMUM

POWER MISSION, THE FREQUENCY VARIES FROM 420 TO 395 CYCLES.

ON [REDACTED] LEVEL AT 72,000 FEET MISSION FREQUENCY VARIES FROM 420 TO 365 CYCLES. ON [REDACTED] LEVEL AT 70,000 FEET MISSION THE FREQUENCY VARIES FROM 420 TO 350 CYCLES.

2. INVESTIGATION BY [REDACTED] OF EFFECTS OF FREQUENCY VARIATION ON [REDACTED] DISCLOSES [REDACTED] TOTAL OF 5 TRANSFORMERS WHICH ARE NOT GUARANTEED AT FREQUENCIES AS LOW AS 350 CYCLES. HOWEVER, IT IS PROBABLE THAT OPERATION WILL BE SATISFACTORY. THE TRANSFORMER MANUFACTURER CAN NOW FURNISH REPLACEMENT PARTS OF ADVANCED DESIGN WHICH WOULD DEFINITELY HAVE ADEQUATE FREQUENCY

SECRET

25X1A

4079 (IN 00206)

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TOLERANCE.

3. THE DIRECT DRIVEN ALTERNATOR SYSTEM WILL FURNISH ADEQUATE POWER IF MISSIONS ARE PROGRAMMED TO KEEP THE FREQUENCY ABOVE 380 CYCLES. ALSO IT IS PROBABLE THAT <sup>25X1D</sup> WILL OPERATE PROPERLY AT EVEN LOWER FREQUENCIES. AN AIRCRAFT AC SYSTEM HAVING FREQUENCY REGULATION WOULD NOT BE AVAILABLE IN THE NEAR FUTURE AND WOULD RESULT IN ADDITIONAL WEIGHT AND COMPLICATION. FLIGHT TESTS AND KIT MANUFACTURE OF THE DIRECT DRIVEN ALTERNATOR SYSTEM ARE PRECEEDING.

END OF MESSAGE

*acceptable  $\Delta$  freq -  $\pm 20$  cycles ( $\pm 5\%$ )  
cost of new transformers \$40-50 each + install  
(if they will fit)  
1 ea required in  
5 ea required in*

25X1D

SECRET